

SEQUENCE LISTING

<110> E. I. du Pont de Nemours and Company

<120> PLANT DISEASE RESISTANCE GENES

<130> BB1313

<140>

<141>

<150> 60/112,737

<151> 1998-12-18

<160> 42

<170> Microsoft Office 97

<210> 1

<211> 1600

<212> DNA

<213> Oryza sativa

<400> 1

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<211> 290

<212> PRT

<213> Oryza sativa

<400> 2

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 Ala Ile Ile Ala Met Met Ala Val Glu Ile Lys Glu Arg His Thr Val
 35 40 45
 Ile Gln Gly Met Pro Val Val Lys Leu Ser Asp Glu His Phe Trp Phe
 50 55 60
 Gly Lys Pro Arg Leu Val Leu His Leu Ile His Phe Ala Ser Phe Gln
 65 70 75 80
 Asn Ala Phe Glu Ile Thr Tyr Phe Phe Trp Ile Trp Tyr Glu Phe Gly
 85 90 95
 Leu Arg Ser Cys Phe His Asp Asn Phe Glu Leu Ile Ile Ala Arg Val
 100 105 110
 Cys Leu Gly Val Val Val Gln Phe Met Cys Ser Tyr Ile Thr Leu Pro
 115 120 125
 Leu Tyr Ala Leu Val Ser Gln Met Gly Ser Gln Met Lys Arg Thr Ile
 130 135 140
 Phe Asp Glu Gln Thr Ala Lys Ala Leu Lys Lys Trp His Lys Ala Ala
 145 150 155 160
 Val Val Lys Lys Lys Gln Gln Lys Gly Ser Ser His Glu Pro Gly Ser
 165 170 175
 Glu Thr Pro Gly Thr Glu Thr Thr Thr Thr Thr Ala Thr Ala Thr Glu
 180 185 190
 Glu Ser Gln Arg Glu Arg Asp Ala Ala Ala Met Pro Val Arg His Leu
 195 200 205
 His Arg Tyr Lys Thr Ile Ala His Val Gly Ala Thr Gly Thr Leu Ser
 210 215 220
 Asp Ser Asp Cys Ser Asp Thr Asp Thr Pro Phe Ala Ser Pro Thr Arg
 225 230 235 240
 Leu Leu Ile Pro Pro Thr Lys Gln Arg Ser Leu Asp Ala Gly Arg Ala
 245 250 255
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 Gln Lys
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 <213> Oryza sativa

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<212> PRT
<213> Oryza sativa

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<221> UNSURE
<222> (62)

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20 25 30
Phe Val Ile Val Ile Ile Ser Leu Leu Phe Glu Arg Leu Leu His Arg
35 40 45
Leu Gly Lys Arg Leu Lys Lys Thr Ala Arg Thr Ala Leu Xaa Gly Thr
50 55 60
Leu Lys Ser Lys Lys Thr Asp Ala Ala Gly Val Ile Ser Leu Leu Leu
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Lys

<210> 5
<211> 513
<212> DNA
<213> Oryza sativa

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<212> PRT
<213> Oryza sativa

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35 40 45
Ser Arg Gly Ser Ser Pro Val His Leu Leu His Lys Gln Arg Val Arg
50 55 60
Ser Glu Asp Pro Pro Ser Ala Pro Ala Ser Pro Gly Phe Ala Gly Glu
65 70 75 80
Ala Arg Asp Met Tyr Pro Val Pro Val Ala Pro Val Val Arg Pro His
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Gly Phe Asn Arg Met Asp Pro Asp Lys Arg Arg Ala Ala Ser Ser Ser
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Ala Ile Gln Val Asp Ile Ala Asp Ser Asp Phe Ser Phe Ser Val Gln
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<210> 7
<211> 1745
<212> DNA
<213> Glycine max

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<211> 506
<212> PRT
<213> Glycine max

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35 40 45
Gln Lys Pro Leu Tyr Glu Ala Leu Gln Lys Ile Lys Glu Glu Leu Met
50 55 60
Leu Leu Gly Phe Ile Ser Leu Leu Leu Thr Val Thr Gln Asn Gly Ile
65 70 75 80
Thr Lys Ile Cys Val Arg Pro Ser Leu Thr Leu His Met Leu Pro Cys
85 90 95

Asn Leu His Asp Ala Pro Ala Asn His Glu Ser His Phe Gln Thr Phe
 100 105 110
 Phe Pro Gly Thr Ala Arg Arg Leu Leu Ser Gly Glu His Ser Thr Pro
 115 120 125
 Glu Ser Ala Ser Lys Ile Gly Tyr Cys Ser Arg Lys His Lys Val Pro
 130 135 140
 Leu Leu Ser Val Glu Ala Leu His His Leu His Ile Phe Ile Phe Val
 145 150 155 160
 Leu Ala Val Val His Val Ser Phe Ser Val Leu Thr Val Val Phe Gly
 165 170 175
 Gly Ala Arg Ile Arg Gln Trp Lys His Trp Glu Asp Ser Ile Ala Lys
 180 185 190
 Gln Asn Tyr Glu Thr Asp Arg Val Leu Lys Pro Lys Val Thr Gln Val
 195 200 205
 His Gln His Asp Phe Ile Arg Gly Arg Phe Ala Gly Phe Gly Lys Asp
 210 215 220
 Ser Ala Ile Val Gly Trp Leu Leu Ser Phe Leu Lys Gln Phe Tyr Gly
 225 230 235 240
 Ser Val Thr Lys Ser Asp Tyr Val Thr Leu Arg His Gly Phe Ile Met
 245 250 255
 Thr His Cys Arg Thr Asn Pro Lys Phe Asn Phe His Lys Tyr Met Ile
 260 265 270
 Arg Ala Leu Glu Asp Asp Phe Lys Gln Val Val Gly Ile Ser Trp Asp
 275 280 285
 Leu Trp Leu Phe Val Val Ile Phe Leu Leu Leu Asn Ile Asn Gly Trp
 290 295 300
 His Thr Tyr Phe Trp Ile Ala Phe Ile Pro Val Ile Leu Leu Leu Ala
 305 310 315 320
 Val Gly Thr Lys Leu Glu His Ile Ile Thr Gln Leu Ala His Glu Val
 325 330 335
 Pro Glu Lys His Ala Ala Ile Glu Gly Asp Leu Val Val Gln Pro Ser
 340 345 350
 Asp Glu His Phe Trp Phe His Arg Pro His Val Val Leu Phe Leu Ile
 355 360 365
 His Phe Ile Leu Phe Gln Asn Ala Phe Glu Ile Ala Phe Phe Phe Trp
 370 375 380
 Ile Trp Val Thr Tyr Gly Phe Asp Ser Cys Ile Met Gly Gln Val Arg
 385 390 395 400
 Tyr Ile Val Pro Arg Leu Val Ile Gly Val Phe Ile Gln Val Leu Cys
 405 410 415

Ser Tyr Ser Thr Leu Pro Leu Tyr Ala Ile Val Thr Gln Met Gly Thr
 420 425 430
 His Tyr Lys Arg Ala Ile Phe Asn Asp His Leu Gln Gln Asn Ile Val
 435 440 445
 Gly Trp Ala Gln Lys Ala Lys Lys Arg Lys Gly Leu Lys Ala Asp Gly
 450 455 460
 Asn Pro Gly Gln Gly Ser Ser Gln Glu Ser Ala Asn Thr Gly Ile Gln
 465 470 475 480
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 485 490 495
 Ala Pro Lys Ala Asp Gly Ile Ser Ser Val
 500 505

<210> 9
 <211> 563
 <212> DNA
 <213> Glycine max

<220>
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 <213> Glycine max

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 <222> (151)

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<222> (168)

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<220>
<221> UNSURE
<222> (186)

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Gln Asn Ala Phe Gln Met Ala His Phe Val Trp Thr Val Ala Thr Pro
35 40 45
Gly Leu Lys Lys Cys Phe His Met His Ile Gly Leu Ser Ile Met Lys
50 55 60
Val Val Leu Gly Leu Ala Leu Gln Phe Leu Cys Ser Tyr Ile Thr Phe
65 70 75 80
Pro Leu Tyr Ala Leu Val Thr Gln Met Gly Ser Asn Met Lys Arg Ser
85 90 95
Ile Phe Asp Glu Gln Thr Ala Lys Ala Leu Thr Asn Trp Arg Asn Thr
100 105 110
Ala Lys Glu Lys Lys Lys Val Arg Asp Thr Asp Met Leu Met Ala Gln
115 120 125
Met Ile Gly Asp Ala Thr Pro Ser Arg Gly Thr Ser Pro Met Pro Ser
130 135 140
Arg Ala Ser Ser Pro Val Xaa Leu Leu His Lys Gly Met Gly Arg Ser
145 150 155 160
Asp Asp Ser Gln Ser Ala Pro Xaa Ser Pro Arg Thr Met Glu Glu Ala
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Xaa Asp Met Tyr Pro Val Val Val Ala Xaa Pro
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<212> DNA
<213> Glycine max

<220>
<221> unsure
<222> (1370)

<400> 11

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<210> 12

<211> 530

<212> PRT

<213> Glycine max

<220>

<221> UNSURE

<222> (406)

<400> 12

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Ile Ala Leu Glu Lys Ser Leu His Lys Val Gly Thr Trp Leu Gly Gln
          35                      40          45

Lys Lys Lys Lys Ala Leu Leu Glu Ala Leu Glu Lys Val Lys Ala Glu
          50                      55          60

Leu Met Ile Leu Gly Phe Ile Ser Leu Leu Leu Thr Phe Gly Gln Ser
          65                      70          75          80
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Glu	Glu	His	Arg	Arg	Lys	Leu	Leu	Ser	Tyr	Glu	Arg	Arg	Tyr	Leu	Ala	115	120	125
Ala	Asp	Thr	Thr	Ser	Phe	Lys	Cys	Ser	Arg	Glu	Gly	His	Glu	Pro	Leu	130	135	140
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Glu	Asp	Asp	Phe	Lys	Val	Val	Val	Gly	Val	Ser	Pro	Ile	Leu	Trp	Ala	275	280	285
Ser	Val	Val	Val	Tyr	Leu	Leu	Ile	Asn	Val	Asn	Gly	Trp	His	Thr	Val	290	295	300
Leu	Trp	Ala	Ala	Leu	Ile	Pro	Val	Val	Ile	Ile	Leu	Ala	Val	Gly	Thr	305	310	315
Lys	Leu	Gln	Ala	Ile	Leu	Ala	Asn	Met	Ala	Leu	Glu	Ile	Thr	Glu	Arg	325	330	335
His	Ala	Val	Val	Gln	Gly	Met	Pro	Leu	Val	Gln	Gly	Ser	Asp	Lys	Tyr	340	345	350
Phe	Trp	Phe	Gly	Gln	Pro	Gln	Leu	Val	Leu	His	Leu	Ile	His	Phe	Ala	355	360	365
Leu	Phe	Gln	Asn	Ala	Phe	Gln	Ile	Thr	Tyr	Ile	Leu	Trp	Ile	Trp	Tyr	370	375	380
Ser	Phe	Gly	Leu	Arg	Asn	Cys	Phe	Arg	Thr	Asp	Tyr	Lys	Leu	Ala	Val	385	390	395
																		400

Val Lys Val Ala Leu Xaa Met Met Leu Cys Leu Cys Ser Tyr Ile Thr
405 410 415

Leu Pro Leu Tyr Ala Leu Val Thr Gln Met Gly Ser Arg Met Lys Thr
420 425 430

Ala Ile Phe Asp Glu Gln Thr Asn Lys Ala Leu Lys Lys Trp His Met
435 440 445

Ala Ala Lys Lys Lys Gln Gly Gly Ala Val Thr Leu Gly Lys Ser Ser
450 455 460

Ala Arg Ile Met Asp Gly Ser Pro Ile Gly Asn Ser Ser Thr Val His
465 470 475 480

Ser Leu Ala Pro His Tyr Thr Val Ser Lys Leu Leu Ala Thr Gln Pro
485 490 495

Ala Pro His Gln Gln Arg Thr Arg Ile Lys Ile Lys Ile Met Asn Met
500 505 510

Asn Pro Met Val Leu Ser Cys Leu Arg Trp Arg Arg Lys Gln Gln Ala
515 520 525

Ser Leu
530

<210> 13
<211> 357
<212> DNA
<213> Glycine max

<400> 13
gcacgagggg atatagagag aggtttagaa gagtgaagag aaaatgggtg gtggaggtga 60
agaagggaac aatttggaat tcactccac ttgggttggt gctgttggtt gttctgtgat 120
tggtgctgct tcgtttgctg ctgaaagggt tcttcattat ggagggaagt ttctcaagag 180
gaagaatcag aagccactct atgaagccct ggaaaaaatc aaagaagagt tgatgctgtt 240
gggctttatt tctctgctac tgacaataac acaaaatggg atcatcagaa tttgtgttcc 300
agtgggttg actcaccata tgcttccttg cagtctaaag gataaaaaaa aaaaaaa 357

<210> 14
<211> 104
<212> PRT
<213> Glycine max

<400> 14
Met Gly Gly Gly Gly Glu Glu Gly Asn Asn Leu Glu Phe Thr Pro Thr
1 5 10 15

Trp Val Val Ala Val Val Cys Ser Val Ile Val Ala Ala Ser Phe Ala
20 25 30

Ala Glu Arg Phe Leu His Tyr Gly Gly Lys Phe Leu Lys Arg Lys Asn
35 40 45

Gln Lys Pro Leu Tyr Glu Ala Leu Glu Lys Ile Lys Glu Glu Leu Met
50 55 60

Leu Leu Gly Phe Ile Ser Leu Leu Leu Thr Ile Thr Gln Asn Gly Ile
65 70 75 80

Ile Arg Ile Cys Val Pro Val Gly Trp Thr His His Met Leu Pro Cys
85 90 95

Ser Leu Lys Asp Lys Lys Lys Lys
100

<210> 15
<211> 678
<212> DNA
<213> Triticum aestivum

<400> 15
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accgccccga ctgggtcctc ttcttcatac acctgacgct gttccagaat gcgtttcaga 120
tggcacattt cgtctggaca gtggccacgc ccggcttgaa gaaatgcttc catatgcaca 180
tcggtctgag catcatgaag gtcgtgctgg ggctggctct tcagttcctc tgcagctata 240
tcaccttccc cctctacgcg ctctgcacac agatgggatc gaacatgaag aggtccatct 300
tcgacgagca gacggccaag gcgctgacca actggcggaa cacggccaag gagaagaaga 360
aggtccgaga cacggacatg ctgatggcgc agatgatcgg cgacgcgacg cccagccgag 420
gcacgtcgcc gatgcctagc cgggcttctg caccggtgca cctgcttcac aaggggcatgg 480
gacgggtccga cgatccccag agcgcgccga cctcgccaag gaccatggag gaggctaggg 540
acatgtaccc ggttgtggtg gcgcatcccg tgcacagact aaatcctgct gacaggcgga 600
ggtcggtctc ttcgtcggga ctcgaggccg acatcccagc gcagattttt ccttcaacca 660
gggatgagac caagtttt 678

<210> 16
<211> 221
<212> PRT
<213> Triticum aestivum

<400> 16
Thr Ser Val Ile Lys Gly Ala Pro Val Val Glu Pro Ser Asn Lys Phe
1 5 10 15
Phe Trp Phe His Arg Pro Asp Trp Val Leu Phe Phe Ile His Leu Thr
20 25 30
Leu Phe Gln Asn Ala Phe Gln Met Ala His Phe Val Trp Thr Val Ala
35 40 45
Thr Pro Gly Leu Lys Lys Cys Phe His Met His Ile Gly Leu Ser Ile
50 55 60
Met Lys Val Val Leu Gly Leu Ala Leu Gln Phe Leu Cys Ser Tyr Ile
65 70 75 80
Thr Phe Pro Leu Tyr Ala Leu Val Thr Gln Met Gly Ser Asn Met Lys
85 90 95
Arg Ser Ile Phe Asp Glu Gln Thr Ala Lys Ala Leu Thr Asn Trp Arg
100 105 110
Asn Thr Ala Lys Glu Lys Lys Lys Val Arg Asp Thr Asp Met Leu Met
115 120 125
Ala Gln Met Ile Gly Asp Ala Thr Pro Ser Arg Gly Thr Ser Pro Met
130 135 140

Pro Ser Arg Ala Ser Ser Pro Val His Leu Leu His Lys Gly Met Gly
145 150 155 160

Arg Ser Asp Asp Pro Gln Ser Ala Pro Thr Ser Pro Arg Thr Met Glu
165 170 175

Glu Ala Arg Asp Met Tyr Pro Val Val Val Ala His Pro Val His Arg
180 185 190

Leu Asn Pro Ala Asp Arg Arg Arg Ser Val Ser Ser Ser Gly Leu Glu
195 200 205

Ala Asp Ile Pro Ser Ala Asp Phe Ser Phe Asn Gln Gly
210 215 220

<210> 17
<211> 1496
<212> DNA
<213> Triticum aestivum

<400> 17
gcacgaggag tacgtttggg ggcgccatggc cggcggtgga gggaaggcca agccgctcga 60
gtacacgccg acatggatcg tggcggttggg ctgctccgctc atgatcatca tctccctgct 120
cttcgagcgc ttgctccacc gcctaggcaa gaggctgata aggagccgta agaagccgct 180
gtacgaggcc ctctgaagg tgaaggagga gctgatgctg ctgggggttca tctcgctgct 240
gctcaccgtg ttccagggtc ccatggggaa ggtgtgcgtc agcccgagcg ccatgctcca 300
cctgcagccc tgcagccgcc gccgcacgag acggaccacc tcggcgacgc cgtgttcacc 360
ggtgttccat tgggaagggt ttggtccgcc cgagcttgtt ggagggccct cctcctccga 420
cgaatactgc ctcaagaagg acaaagtccc attactttca tctgacgcta ttcattcaatt 480
gcacatattt atcttttgtt tggcggtcac ccatttcctt ctgagtgtca ttacagttct 540
tctaggaatg gcacagacga gaaattggcg acattgggag cccaagatcc aagaaaataa 600
tggcagtga cctcaaata tcaagcatgt tcaagaattc aaatttatcc aagaccactt 660
caaaggtcat agaaaacggt cgaggatatt tggttggatg cggttccttct tcaaacaatt 720
gtatggatcg gtcaccgagg aggaactacac aacaatgaga cttggtttca tcatgaaaca 780
ctgtaaggga acaccaaata tcaactttta tagttacatg atcagggtt tggaggttga 840
ctttaagaaa gtcgttggtt ttagttggta cttttgggcc atgttgatga tattcctact 900
attgaatggt gaagggtggt atgtctacat ttggatcacc ttggttccat tcattatgtt 960
acttatggta ggaagtaaga tggagcacat cataacggaa ttggcttatg aggttgccca 1020
gaagcacacg gctattcgag gggatttagt agtttctcct tcagataact tcttttgggt 1080
ccaccggcct aaattagttc ttctgttgat ccacatcgct ctatttcaga atgcatttga 1140
aattgcattt ttcttctggc tcttggtgac atatggtttt aaatcatgca tcatggggaa 1200
accagcatat gttattactc gagttgtcat aagtgtaatc tgccaagtcc tttgtggtta 1260
cagcacccta ccactatacg ccgtcgtctc ccatatgggg aattccttca agaagactat 1320
atgtgatgaa aatgtgactg aaggccttgt caactgggct gaaaaggcta ggagaggcac 1380
aagaacccca aataaaatta ctacagatgc aagtagttca ccaattgatg aggcaaatgg 1440
tggcgcggtt caaatgacaa atacacgggc aaactcgtcg gtggagcaag gcaacg 1496

<210> 18
<211> 450
<212> PRT
<213> Triticum aestivum

<400> 18
Met Ala Gly Gly Gly Gly Lys Ala Lys Pro Leu Glu Tyr Thr Pro Thr
1 5 10 15
Trp Ile Val Ala Leu Val Cys Ser Val Met Ile Ile Ile Ser Leu Leu
20 25 30

Phe	Glu	Arg	Leu	Leu	His	Arg	Leu	Gly	Lys	Arg	Leu	Ile	Arg	Ser	Arg		
		35					40					45					
Lys	Lys	Pro	Leu	Tyr	Glu	Ala	Leu	Leu	Lys	Val	Lys	Glu	Glu	Leu	Met		
		50				55					60						
Leu	Leu	Gly	Phe	Ile	Ser	Leu	Leu	Leu	Thr	Val	Phe	Gln	Gly	Pro	Met		
		65			70					75					80		
Gly	Lys	Val	Cys	Val	Ser	Pro	Ser	Ala	Met	Leu	His	Leu	Gln	Pro	Cys		
				85					90					95			
Ser	Arg	Arg	Arg	Thr	Arg	Arg	Thr	Thr	Ser	Ala	Thr	Pro	Cys	Ser	Pro		
				100				105						110			
Val	Phe	His	Trp	Glu	Gly	Phe	Gly	Pro	Pro	Glu	Leu	Val	Gly	Gly	Pro		
		115					120						125				
Ser	Ser	Ser	Asp	Glu	Tyr	Cys	Leu	Lys	Lys	Asp	Lys	Val	Pro	Leu	Leu		
		130				135					140						
Ser	Ser	Asp	Ala	Ile	His	Gln	Leu	His	Ile	Phe	Ile	Phe	Val	Leu	Ala		
		145			150					155					160		
Val	Thr	His	Phe	Leu	Leu	Ser	Ala	Ile	Thr	Val	Leu	Leu	Gly	Met	Ala		
				165					170					175			
Gln	Thr	Arg	Asn	Trp	Arg	His	Trp	Glu	Pro	Lys	Ile	Gln	Glu	Asn	Asn		
			180					185					190				
Gly	Ser	Ala	Pro	Gln	Met	Ile	Lys	His	Val	Gln	Glu	Phe	Lys	Phe	Ile		
		195					200					205					
Gln	Asp	His	Phe	Lys	Gly	His	Arg	Lys	Arg	Ser	Arg	Ile	Phe	Gly	Trp		
		210				215					220						
Met	Arg	Ser	Phe	Phe	Lys	Gln	Leu	Tyr	Gly	Ser	Val	Thr	Glu	Glu	Asp		
		225			230					235					240		
Tyr	Thr	Thr	Met	Arg	Leu	Gly	Phe	Ile	Met	Lys	His	Cys	Lys	Gly	Thr		
			245						250					255			
Pro	Lys	Phe	Asn	Phe	Tyr	Ser	Tyr	Met	Ile	Arg	Ala	Leu	Glu	Val	Asp		
			260					265					270				
Phe	Lys	Lys	Val	Val	Gly	Ile	Ser	Trp	Tyr	Leu	Trp	Ala	Met	Leu	Met		
		275					280					285					
Ile	Phe	Leu	Leu	Leu	Asn	Val	Glu	Gly	Trp	Tyr	Val	Tyr	Ile	Trp	Ile		
		290				295					300						
Thr	Leu	Val	Pro	Phe	Ile	Met	Leu	Leu	Met	Val	Gly	Ser	Lys	Met	Glu		
		305			310					315					320		
His	Ile	Ile	Thr	Glu	Leu	Ala	Tyr	Glu	Val	Ala	Gln	Lys	His	Thr	Ala		
				325					330					335			
Ile	Arg	Gly	Asp	Leu	Val	Val	Ser	Pro	Ser	Asp	Asn	Phe	Phe	Trp	Phe		
			340					345					350				

His	Arg	Pro	Lys	Leu	Val	Leu	Leu	Leu	Ile	His	Ile	Val	Leu	Phe	Gln
		355					360					365			
Asn	Ala	Phe	Glu	Ile	Ala	Phe	Phe	Phe	Trp	Leu	Leu	Val	Thr	Tyr	Gly
	370					375					380				
Phe	Lys	Ser	Cys	Ile	Met	Gly	Lys	Pro	Ala	Tyr	Val	Ile	Thr	Arg	Val
385					390					395					400
Val	Ile	Ser	Val	Ile	Cys	Gln	Val	Leu	Cys	Gly	Tyr	Ser	Thr	Leu	Pro
				405					410					415	
Leu	Tyr	Ala	Val	Val	Ser	His	Met	Gly	Asn	Ser	Phe	Lys	Lys	Thr	Ile
			420					425					430		
Phe	Asp	Glu	Asn	Val	Thr	Glu	Gly	Leu	Val	Asn	Trp	Ala	Glu	Lys	Ala
		435					440					445			
Arg	Arg														
		450													

<210> 19
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 <212> DNA
 <213> *Triticum aestivum*

<220>
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<220>
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<220>
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<222> (441)

<400> 19
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tattggcatc atcgttcagg tgctctgcag ctacagcacc ctgccgctgt acgccattgt 120
caccacatg ggcggcgaca tcaagctgca ggcgttcggc gagcacgtac acgtgtccgt 180
gcacagctgg ggcacggacg tgaagaagaa ggcgacgtcg ctgccggccc atccgcaccc 240
gcaccagcac ccgcaactgc aactccgat tccgtttctc aacaatgaag cngcacagcg 300
gaccttgacc ttgcaaccga ggaagctgca gccgcggcga agggcgacgg agcaacgcgc 360
tggaantcca antctccac cgnaccgccg gaacaacggg ccgacactan aggaattngt 420
gacacaangg gggagacatc ntctcgaacg ccanttccct acggctanat cccn 474

<210> 20
<211> 133
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (122)

<220>
<221> UNSURE
<222> (124)

<220>
<221> UNSURE
<222> (128)

<400> 20
Thr Tyr Gly Phe Asp Ser Cys Ile Met Glu Asn Arg Ser Tyr Ala Ile
1 5 10 15
Pro Arg Leu Ala Ile Gly Ile Ile Val Gln Val Leu Cys Ser Tyr Ser
20 25 30
Thr Leu Pro Leu Tyr Ala Ile Val Thr His Met Gly Gly Asp Ile Lys
35 40 45
Leu Gln Ala Phe Gly Glu His Val His Val Ser Val His Ser Trp Ala
50 55 60
Thr Asp Val Lys Lys Lys Ala Thr Ser Leu Pro Ala His Pro His Pro
65 70 75 80
His Gln His Pro His Ser Gln Leu Arg Ile Pro Phe Leu Asn Asn Glu
85 90 95
Ala Ala Gln Arg Thr Leu Thr Leu Gln Pro Arg Lys Leu Gln Pro Arg
100 105 110
Arg Arg Ala Thr Glu Gln Arg Ala Gly Xaa Pro Xaa Leu Pro Pro Xaa
115 120 125

Arg Arg Asn Asn Gly
130

<210> 21
<211> 548
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (516)

<220>
<221> unsure
<222> (526)

<220>
<221> unsure
<222> (545)

<400> 21
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gaagcagatt ttaagaaagt gggttggtata agctggtact tgtggatatt cgttatgata 120
ttcctgctgc tgaatgttaa tggttggcac acatactttt ggatctcctt cgttcccctt 180
ctacttttgc tggccgttgg caccaagcta gaacatgtca taacccaact agcccatgag 240
gttgccgaga agcactctgc aattgagggc gacttggttg tgaatccatc agacgagcac 300
ttttgggttg gacggcggaa ggtgatccta tacctgatcc attttatcct cttccaaaac 360
gcggttcgaga tcgcgtttctt cttctggatt ctgaccacct acggtttcaa ctcctgcatc 420
aagggaccaa cgctccctttt atcctgacaa ggcttatcat cgggggcatc gttcaaatacc 480
tctgcaacta caagtacctt gcctaataata tgcaantgtc acacanatgg ggctcccttt 540
ttaanaaa 548

<210> 22
<211> 156
<212> PRT
<213> Oryza sativa

<400> 22
Tyr Arg Tyr Met Val Arg Ala Leu Glu Ala Asp Phe Lys Lys Val Val
1 5 10 15
Gly Ile Ser Trp Tyr Leu Trp Ile Phe Val Met Ile Phe Leu Leu Leu
20 25 30
Asn Val Asn Gly Trp His Thr Tyr Phe Trp Ile Ser Phe Val Pro Leu
35 40 45
Leu Leu Leu Leu Ala Val Gly Thr Lys Leu Glu His Val Ile Thr Gln
50 55 60
Leu Ala His Glu Val Ala Glu Lys His Ser Ala Ile Glu Gly Asp Leu
65 70 75 80
Val Val Asn Pro Ser Asp Glu His Phe Trp Phe Gly Arg Pro Lys Val
85 90 95
Ile Leu Tyr Leu Ile His Phe Ile Leu Phe Gln Asn Ala Phe Glu Ile
100 105 110

Ala	Phe	Phe	Phe	Trp	Ile	Leu	Thr	Thr	Tyr	Gly	Phe	Asn	Ser	Cys	Ile
	115						120					125			

Lys	Gly	Thr	Asn	Val	Pro	Phe	Ile	Leu	Thr	Arg	Leu	Ile	Ile	Gly	Gly
	130					135					140				

Ile	Val	Gln	Ile	Leu	Cys	Asn	Tyr	Lys	Tyr	Leu	Ala
145					150					155	

<210> 23
 <211> 738
 <212> DNA
 <213> Oryza sativa

<220>
 <221> unsure
 <222> (459)

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<220>
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<220>
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 <222> (721)

<400> 23
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 acaggaaacc cctggacaaa gccatgcaag gagcacttct gggttcagcaa gcctaggatt 180
 gtccctccatt tgatccactt catcctgttc cagaactcct ttgagatggg ttttttcttc 240
 tgggttctgg caacatatgg gtttgattca tgcacatgg agaacaagat ttatgccctc 300
 cccagacttg ctattggaat catcgctccag gtgctctgca gctacagcac gctgccgcta 360
 tacgccatcg ttaccacat gggcggggac atcaagctgc aggcgttcgg cgagacggtg 420
 cacgtgtcgg tgcacagctg ggcgacggac gtgaggaana agaaggcggc gccgccgccg 480
 cactcccacc tccgcatccc ctctctcatg aagcgacgcc acagcaccg cggcgccgac 540
 gacgccgcgg acgacgccgg cggcgacgtc gaccaccaac accaccatca cgggcaccan 600
 catcanngtc accaacaaca acgaggggag ctccgtcggg ggcgggcggg gcccggtnc 660
 nggagggaga tngtngccna acnacgtcct ggcggncgag gacgggncac ccggccgggc 720
 nccgccgcct tttttttt 738

<210> 24
 <211> 155
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (153)

<400> 24
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 1 5 10 15
 Ile Val Gly Thr Lys Leu Glu Leu Ile Ser Thr Arg Leu Ala Gln Glu
 20 25 30
 Ala Ala Asp Cys Pro Asp Glu Ala Thr Gly Asn Pro Trp Thr Lys Pro
 35 40 45
 Cys Lys Glu His Phe Trp Phe Ser Lys Pro Arg Ile Val Leu His Leu
 50 55 60
 Ile His Phe Ile Leu Phe Gln Asn Ser Phe Glu Met Gly Phe Phe Phe
 65 70 75 80
 Trp Val Leu Ala Thr Tyr Gly Phe Asp Ser Cys Ile Met Glu Asn Lys
 85 90 95
 Ile Tyr Ala Leu Pro Arg Leu Ala Ile Gly Ile Ile Val Gln Val Leu
 100 105 110
 Cys Ser Tyr Ser Thr Leu Pro Leu Tyr Ala Ile Val Thr His Met Gly
 115 120 125
 Gly Asp Ile Lys Leu Gln Ala Phe Gly Glu Thr Val His Val Ser Val
 130 135 140
 His Ser Trp Ala Thr Asp Val Arg Xaa Lys Lys
 145 150 155

<210> 25
 <211> 574
 <212> DNA
 <213> Oryza sativa

<220>
 <221> unsure
 <222> (17)

<220>
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<400> 25
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 tgcacatctc atgcttccat gcattactag agagacgtcc gagaccacag aagatgcttc 180
 caaactttgc aagcgaaagg gtgaagttcc tatgctatct gaagaggcct tgcacagct 240
 gcacatcttt atctttgtcc ttggtattgt ccatgttgta ttttgtgta caacattgtt 300
 acttggtgga gccaaagatga aaaaatggga agaaatggga gaaagaaatt cancaaggaa 360
 gaaccaagga gcgaccaaag aggccaggct ggatgaaatt cattgttgta agatgtgcca 420
 tctcattctt gaagcanttt tatgattctg ttggnaaacc tggattatca agtacttaag 480
 atcagctttt ggtcaagagg gcactaccaa accgtcctgg attttgattt ccacangtac 540
 aagggtccg tgccnctga gcatgacttt taag 574

<210> 26
 <211> 111
 <212> PRT
 <213> Oryza sativa

<220>
 <221> UNSURE
 <222> (6)

<400> 26
 Cys Leu Pro Tyr Asp Xaa Pro Asp Tyr Ala His Met Ala Met Glu Ala
 1 5 10 15
 Ser Gly Phe Ile Ser Phe Leu Leu Ser Val Phe Gln Lys Phe Ile Asn
 20 25 30

His Ile Cys Ile Pro Glu Ser Ala Ala His Leu Met Leu Pro Cys Ile
 35 40 45

Thr Arg Glu Thr Ser Glu Thr Thr Glu Asp Ala Ser Lys Leu Cys Lys
 50 55 60

Arg Lys Gly Glu Val Pro Met Leu Ser Glu Glu Ala Leu His Gln Leu
 65 70 75 80

His Ile Phe Ile Phe Val Leu Gly Ile Val His Val Val Phe Cys Val
 85 90 95

Thr Thr Leu Leu Leu Gly Gly Ala Lys Met Lys Lys Trp Glu Glu
 100 105 110

<210> 27
 <211> 960
 <212> DNA
 <213> Glycine max

<400> 27
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 ggaaacacct acatgggctg tggccgttgt ttgcttcggt ttgctctcca tatctatctt 120
 gatcgagcac atcctgcatc tcattggaaa gtggttgaag aagaagcaca agagagctct 180
 atgcgaggca ctgaaaaaga tcaaatacaga gcttatgcta ttgggggttca tatcgttgct 240
 cctaacggtg ggacaagggtc taatatcgag gatatgtata tcagaaaagg ttgcggggac 300
 atttcacccc tgtccaaaaa aatactataa gaagaaggaa gagtcagagc accgaaccaa 360
 taatggtcgg agattactag cggcttttct cgattccgat aacaaaaatc accgctcgat 420
 tttggcggcg ggaggtggtg acaactgtcc cccgggtaaa gtcccgtttg tctcatccga 480
 gggatattcat caactccata tatttatctt cgtgctggct gtctttcatg tcctttactg 540
 catactcact ctactctctg gtagagcaaa gatgagaagg tggaaacgat gggagagga 600
 aaccaagaca gcacagtacc aattttcaca cgatcctgaa cgatttagat ttgcgagaga 660
 aacatcattt gggagaagac acctgagttt ctgggcccac aatcctgtcc tcctctggat 720
 tgtttggttc ttcaggcagt ttgtacggtc agttcctaaa gtggattact tgacactgag 780
 gcatggattt atgatggcac atttggggcc tcatagtcac ccgaaattcg actttcggca 840
 atatatcaaa agatcttttg aagaggactt caaagtgggtc gttgaaatca ggtttttcgc 900
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<210> 28
 <211> 287
 <212> PRT
 <213> Glycine max

<400> 28
 Met Gly Gly Lys Thr Leu Gln Glu Thr Pro Thr Trp Ala Val Ala Val
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Val Cys Phe Val Leu Leu Ser Ile Ser Ile Leu Ile Glu His Ile Leu
 20 25 30

His Leu Ile Gly Lys Trp Leu Lys Lys Lys His Lys Arg Ala Leu Cys
 35 40 45

Glu Ala Leu Glu Lys Ile Lys Ser Glu Leu Met Leu Leu Gly Phe Ile
 50 55 60

Ser Leu Leu Leu Thr Val Gly Gln Gly Leu Ile Ser Arg Ile Cys Ile
 65 70 75 80

Ser	Glu	Lys	Val	Ala	Gly	Thr	Phe	His	Pro	Cys	Pro	Lys	Lys	Tyr	Tyr		
				85					90					95			
Lys	Lys	Lys	Glu	Glu	Ser	Glu	His	Arg	Thr	Asn	Asn	Gly	Arg	Arg	Leu		
			100					105					110				
Leu	Ala	Ala	Phe	Leu	Asp	Ser	Asp	Asn	Gln	Asn	His	Arg	Arg	Ile	Leu		
		115					120					125					
Ala	Ala	Gly	Gly	Gly	Asp	Asn	Cys	Pro	Pro	Gly	Lys	Val	Pro	Phe	Val		
	130					135					140						
Ser	Ser	Glu	Gly	Ile	His	Gln	Leu	His	Ile	Phe	Ile	Phe	Val	Leu	Ala		
145					150					155					160		
Val	Phe	His	Val	Leu	Tyr	Cys	Ile	Leu	Thr	Leu	Ala	Leu	Gly	Arg	Ala		
			165						170					175			
Lys	Met	Arg	Arg	Trp	Lys	Arg	Trp	Glu	Glu	Glu	Thr	Lys	Thr	Ala	Gln		
		180						185					190				
Tyr	Gln	Phe	Ser	His	Asp	Pro	Glu	Arg	Phe	Arg	Phe	Ala	Arg	Glu	Thr		
		195					200					205					
Ser	Phe	Gly	Arg	Arg	His	Leu	Ser	Phe	Trp	Ala	Gln	Asn	Pro	Val	Leu		
	210					215					220						
Leu	Trp	Ile	Val	Cys	Phe	Phe	Arg	Gln	Phe	Val	Arg	Ser	Val	Pro	Lys		
225					230					235					240		
Val	Asp	Tyr	Leu	Thr	Leu	Arg	His	Gly	Phe	Met	Met	Ala	His	Leu	Gly		
			245						250					255			
Pro	His	Ser	His	Pro	Lys	Phe	Asp	Phe	Arg	Gln	Tyr	Ile	Lys	Arg	Ser		
			260					265					270				
Leu	Glu	Glu	Asp	Phe	Lys	Val	Val	Val	Glu	Ile	Arg	Phe	Phe	Ala			
		275					280					285					

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 <211> 476
 <212> DNA
 <213> Glycine max

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ctacttcaaa tacaccattc tcaagcaggc caggaacccc gacacatggc atgtctccag 180
ttcacttgct tcacaagcac cctagacaca gtgacagtcc aantatttct cccaagggca 240
tacaattnnc aaanatgaac aatgggggtt ttaaagggat acattccccc caggcaacaa 300
cgcaaggaat naatgttctt attaatgaan agaccatgca nattcaaata caagattcaa 360
naacaacggg caacttcaac agcaagatnc ctctaatgg gaccnatccc tatccgaatc 420
aacaatgaat ccacattctt aacctnaatt cattttggaa ggggacacac acttgt 476

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<211> 77
<212> PRT
<213> Glycine max

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<222> (74)

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Glu Asn Val Ala Val Ala Leu Lys Asn Trp His His Thr Ala Lys Lys
20 25 30
His Ile Lys His Asn Lys Asp Ser Thr Ser Asn Thr Pro Phe Ser Ser
35 40 45
Arg Pro Gly Thr Pro Thr His Gly Met Ser Pro Val His Leu Leu His
50 55 60

Lys His Pro Arg His Ser Asp Ser Pro Xaa Ile Ser Pro
65 70 75

<210> 31
<211> 1711
<212> DNA
<213> Triticum aestivum

<400> 31
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ccaatctccg ggatatgcat ctccgagaag gccgccagca tcatgcggcc ctgcagcctg 300
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gcgccgacct cgccaaggac catggaggag gctagggaca tgtaccgggt tgtggtggcg 1500
catcccgtgc acagactaaa tcctgctgac aggcggaggt cggctctctc gtcggcactc 1560
gatgccgaca tccccagcgc agatttttcc ttcagccagg gatgagacaa gtttatgtat 1620
tgatgttagt ccaatgtata gccaacatag gatgtcatga ttcgtacaat aagaaataga 1680
attttttact gagtcaaaaa aaaaaaaaaa a 1711

<210> 32
<211> 534
<212> PRT
<213> Triticum aestivum

<400> 32
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Pro Ser Trp Ala Val Ala Leu Val Phe Ala Val Met Ile Ile Val Ser
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Val Leu Leu Glu His Ala Leu His Lys Leu Gly His Trp Phe His Lys
35 40 45
Arg His Lys Asn Ala Leu Ala Glu Ala Leu Glu Lys Ile Lys Ala Glu
50 55 60
Leu Met Leu Val Gly Phe Ile Ser Leu Leu Leu Ala Val Thr Gln Asp
65 70 75 80

Pro	Ile	Ser	Gly	Ile	Cys	Ile	Ser	Glu	Lys	Ala	Ala	Ser	Ile	Met	Arg	
				85					90					95		
Pro	Cys	Ser	Leu	Pro	Pro	Gly	Ser	Val	Lys	Ser	Lys	Tyr	Lys	Asp	Tyr	
			100					105					110			
Tyr	Cys	Ala	Lys	Lys	Gly	Lys	Val	Ser	Leu	Met	Ser	Thr	Gly	Ser	Leu	
		115					120					125				
His	Gln	Leu	His	Ile	Phe	Ile	Phe	Val	Leu	Ala	Val	Phe	His	Val	Thr	
	130					135					140					
Tyr	Ser	Val	Ile	Ile	Met	Ala	Leu	Ser	Arg	Leu	Lys	Met	Arg	Thr	Trp	
145					150					155					160	
Lys	Lys	Trp	Glu	Thr	Glu	Thr	Ala	Ser	Leu	Glu	Tyr	Gln	Phe	Ala	Asn	
			165						170					175		
Asp	Pro	Ala	Arg	Phe	Arg	Phe	Thr	His	Gln	Thr	Ser	Phe	Val	Lys	Arg	
			180					185					190			
His	Leu	Gly	Leu	Ser	Ser	Thr	Pro	Gly	Ile	Arg	Trp	Val	Val	Ala	Phe	
	195						200					205				
Phe	Arg	Gln	Phe	Phe	Arg	Ser	Val	Thr	Lys	Val	Asp	Tyr	Leu	Thr	Leu	
	210					215					220					
Arg	Ala	Gly	Phe	Ile	Asn	Ala	His	Leu	Ser	His	Asn	Ser	Lys	Phe	Asp	
225					230					235					240	
Phe	His	Lys	Tyr	Ile	Lys	Arg	Ser	Met	Glu	Asp	Asp	Phe	Lys	Val	Val	
				245					250					255		
Val	Gly	Ile	Ser	Leu	Pro	Leu	Trp	Cys	Val	Ala	Ile	Leu	Thr	Leu	Phe	
			260					265					270			
Leu	Asp	Ile	Asp	Gly	Ile	Gly	Thr	Leu	Thr	Trp	Ile	Ser	Phe	Ile	Pro	
	275						280					285				
Leu	Val	Ile	Leu	Leu	Cys	Val	Gly	Thr	Lys	Leu	Glu	Met	Ile	Ile	Met	
	290					295					300					
Glu	Met	Ala	Leu	Glu	Ile	Gln	Asp	Arg	Ala	Ser	Val	Ile	Lys	Gly	Ala	
305					310					315					320	
Pro	Val	Val	Glu	Pro	Ser	Asn	Lys	Phe	Phe	Trp	Phe	His	Arg	Pro	Asp	
				325					330					335		
Trp	Val	Leu	Phe	Phe	Ile	His	Leu	Thr	Leu	Phe	Gln	Asn	Ala	Phe	Gln	
			340					345					350			
Met	Ala	His	Phe	Val	Trp	Thr	Val	Ala	Thr	Pro	Gly	Leu	Lys	Lys	Cys	
		355					360					365				
Phe	His	Met	His	Ile	Gly	Leu	Ser	Ile	Met	Lys	Val	Val	Leu	Gly	Leu	
	370					375					380					
Ala	Leu	Gln	Phe	Leu	Cys	Ser	Tyr	Ile	Thr	Phe	Pro	Leu	Tyr	Ala	Leu	
385					390					395					400	

Val Thr Gln Met Gly Ser Asn Met Lys Arg Ser Ile Phe Asp Glu Gln
 405 410 415
 Thr Ala Lys Ala Leu Thr Asn Trp Arg Asn Thr Ala Lys Glu Lys Lys
 420 425 430
 Lys Val Arg Asp Thr Asp Met Leu Met Ala Gln Met Ile Gly Asp Ala
 435 440 445
 Thr Pro Ser Arg Gly Thr Ser Pro Met Pro Ser Arg Ala Ser Ser Pro
 450 455 460
 Val His Leu Leu His Lys Gly Met Gly Arg Ser Asp Asp Pro Gln Ser
 465 470 475 480
 Ala Pro Thr Ser Pro Arg Thr Met Glu Glu Ala Arg Asp Met Tyr Pro
 485 490 495
 Val Val Val Ala His Pro Val His Arg Leu Asn Pro Ala Asp Arg Arg
 500 505 510
 Arg Ser Val Ser Ser Ser Ala Leu Asp Ala Asp Ile Pro Ser Ala Asp
 515 520 525
 Phe Ser Phe Ser Gln Gly
 530

<210> 33
 <211> 482
 <212> DNA
 <213> Triticum aestivum

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 tgtgcgtgtg tctcgttgat cgatcgaggt ggctcgtttg tcggcaccta aaaagangtt 180
 gagcggcggg tcatggcggg gccggcgagg gggcggggaa tgccggacac cccgacgtgg 240
 gcggtggggc tcgtctgcgc cgttatgata ctgctctccn tcgccatggg gcacgccttc 300
 cacaacctcg ggcactgggt ccacaagcgg cacaanaang gcatngcggn ggcgctggag 360
 aaaattaagg nggggctcan gcttggtggg gcttcatanc cctgntcctc anccgtgggg 420
 caggaacca tntccaagat atgcaatctc cntggagggg cngcancaaa gaatgntccc 480
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<210> 34
 <211> 66
 <212> PRT
 <213> Triticum aestivum

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<400> 34
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Ala Val Gly Leu Val Cys Ala Val Met Ile Leu Val Ser Xaa Ala Met
20 25 30
Gly His Ala Leu His Asn Leu Gly His Trp Phe His Lys Arg His Xaa
35 40 45
Xaa Gly Xaa Ala Xaa Ala Leu Glu Lys Ile Lys Xaa Gly Leu Xaa Leu
50 55 60
Gly Gly
65

<210> 35
<211> 462
<212> DNA
<213> Triticum aestivum

<220>
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 aagcagtttt ataattctgt cggtaaacca gattatcaag tactcagatc agcttttgtt 180
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 aagcatgatt tcaaagaagt agttggaatc agctggtacc tatggctttt cgttatcgtc 300
 ttctctctgc tgaatataaa tgggtggnac acatacttct ggctgtcttt cttgcccttg 360
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<210> 36
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 <212> PRT
 <213> Triticum aestivum

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 Arg Leu Asn Glu Arg Glu Lys Arg Pro Gly Trp Met Lys Pro Ser Ala
 20 25 30
 Val Arg Trp Ile Ile Ala Phe Phe Lys Gln Phe Tyr Asn Ser Val Gly
 35 40 45
 Lys Pro Asp Tyr Gln Val Leu Arg Ser Ala Phe Val Leu Arg His Tyr
 50 55 60
 Pro Asn Arg Pro Asp Phe Asp Phe His Lys Tyr Met Val Arg Ala Leu
 65 70 75 80
 Lys His Asp Phe Lys Glu Val Val Gly Ile Ser Trp Tyr Leu Trp Leu
 85 90 95
 Phe Val Ile Val Phe Leu Leu Leu Asn Ile Asn Gly Trp Xaa Thr Tyr
 100 105 110
 Phe Trp Leu Ser Phe Leu Pro Leu Ile Pro Leu Leu Ile Val Gly
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<210> 37
 <211> 1666
 <212> DNA
 <213> Triticum aestivum

<400> 37

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<210> 38

<211> 492

<212> PRT

<213> Triticum aestivum

<400> 38

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Trp Ile Val Ala Leu Val Cys Ser Val Met Ile Ile Ile Ser Leu Leu
          20          25          30

Phe Glu Arg Leu Leu His Arg Leu Gly Lys Arg Leu Ile Arg Ser Arg
          35          40          45

Lys Lys Pro Leu Tyr Glu Ala Leu Leu Lys Val Lys Glu Glu Leu Met
          50          55          60

Leu Leu Gly Phe Ile Ser Leu Leu Leu Thr Val Phe Gln Gly Pro Met
          65          70          75          80

Gly Lys Val Cys Val Ser Pro Ser Ala Met Leu His Leu Gln Pro Cys
          85          90          95

Lys Pro Pro Pro His Glu Thr Asp His Leu Gly Asp Ala Val Phe Thr
          100          105          110

Gly Val Leu Gly Gly Ala Arg Arg Leu Leu Ala Gly Gly Ala Ser Ser
          115          120          125
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Ser	Asp	Lys	Tyr	Cys	Leu	Lys	Lys	Asp	Lys	Val	Pro	Leu	Leu	Ser	Ser	130	135	140
Asp	Ala	Ile	His	Gln	Leu	His	Ile	Phe	Ile	Phe	Val	Leu	Ala	Val	Thr	145	150	155
His	Phe	Leu	Leu	Ser	Ala	Ile	Thr	Val	Leu	Leu	Gly	Met	Ala	Gln	Thr	165	170	175
Arg	Asn	Trp	Arg	His	Trp	Glu	Thr	Lys	Ile	Gln	Glu	Asn	Asn	Gly	Ser	180	185	190
Ala	Pro	Gln	Met	Ile	Lys	His	Val	Gln	Glu	Phe	Lys	Phe	Ile	Gln	Asp	195	200	205
His	Phe	Lys	Gly	His	Arg	Lys	Arg	Ser	Arg	Ile	Phe	Gly	Trp	Met	Arg	210	215	220
Ser	Phe	Phe	Lys	Gln	Leu	Tyr	Gly	Ser	Val	Thr	Glu	Glu	Asp	Tyr	Thr	225	230	235
Thr	Met	Arg	Leu	Gly	Phe	Ile	Met	Lys	His	Cys	Lys	Gly	Thr	Pro	Lys	245	250	255
Phe	Asn	Phe	Tyr	Ser	Tyr	Met	Ile	Arg	Ala	Leu	Glu	Val	Asp	Phe	Lys	260	265	270
Lys	Val	Val	Gly	Ile	Ser	Trp	Tyr	Leu	Trp	Ala	Met	Leu	Met	Ile	Phe	275	280	285
Leu	Leu	Leu	Asn	Val	Glu	Gly	Trp	Tyr	Val	Tyr	Ile	Trp	Ile	Thr	Leu	290	295	300
Val	Pro	Phe	Ile	Met	Leu	Leu	Met	Val	Gly	Ser	Lys	Met	Glu	His	Ile	305	310	315
Ile	Thr	Glu	Leu	Ala	Tyr	Glu	Val	Ala	Gln	Lys	His	Thr	Ala	Ile	Arg	325	330	335
Gly	Asp	Leu	Val	Val	Ser	Pro	Ser	Asp	Asn	Phe	Phe	Trp	Phe	His	Arg	340	345	350
Pro	Lys	Leu	Val	Leu	Leu	Leu	Ile	His	Ile	Val	Leu	Phe	Gln	Asn	Ala	355	360	365
Phe	Glu	Ile	Ala	Phe	Phe	Phe	Trp	Leu	Leu	Val	Thr	Tyr	Gly	Phe	Lys	370	375	380
Ser	Cys	Ile	Met	Gly	Lys	Pro	Ala	Tyr	Val	Ile	Thr	Arg	Val	Val	Ile	385	390	395
Ser	Val	Ile	Cys	Gln	Val	Leu	Cys	Gly	Tyr	Ser	Thr	Leu	Pro	Leu	Tyr	405	410	415
Ala	Val	Val	Ser	His	Met	Gly	Asn	Ser	Phe	Lys	Lys	Thr	Ile	Phe	Asp	420	425	430
Glu	Asn	Val	Thr	Glu	Gly	Leu	Val	Asn	Trp	Ala	Glu	Lys	Ala	Arg	Arg	435	440	445

Gly Thr Arg Thr Pro Asn Lys Ile Thr Thr Asp Ala Ser Ser Ser Pro
 450 455 460
 Ile Asp Glu Ala Asn Gly Gly Ala Val Gln Met Thr Asn Thr Arg Ala
 465 470 475 480
 Asn Ser Ser Val Glu Gln Gly Thr Ala Arg Leu Ile
 485 490
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 <211> 533
 <212> PRT
 <213> Hordeum vulgare
 <400> 39
 Met Ser Asp Lys Lys Gly Val Pro Ala Arg Glu Leu Pro Glu Thr Pro
 1 5 10 15
 Ser Trp Ala Val Ala Val Val Phe Ala Ala Met Val Leu Val Ser Val
 20 25 30
 Leu Met Glu His Gly Leu His Lys Leu Gly His Trp Phe Gln His Arg
 35 40 45
 His Lys Lys Ala Leu Trp Glu Ala Leu Glu Lys Met Lys Ala Glu Leu
 50 55 60
 Met Leu Val Gly Phe Ile Ser Leu Leu Leu Ile Val Thr Gln Asp Pro
 65 70 75 80
 Ile Ile Ala Lys Ile Cys Ile Ser Glu Asp Ala Ala Asp Val Met Trp
 85 90 95
 Pro Cys Lys Arg Gly Thr Glu Gly Arg Lys Pro Ser Lys Tyr Val Asp
 100 105 110
 Tyr Cys Pro Glu Gly Lys Val Ala Leu Met Ser Thr Gly Ser Leu His
 115 120 125
 Gln Leu His Val Phe Ile Phe Val Leu Ala Val Phe His Val Thr Tyr
 130 135 140
 Ser Val Ile Thr Ile Ala Leu Ser Arg Leu Lys Met Arg Thr Trp Lys
 145 150 155 160
 Lys Trp Glu Thr Glu Thr Thr Ser Leu Glu Tyr Gln Phe Ala Asn Asp
 165 170 175
 Pro Ala Arg Phe Arg Phe Thr His Gln Thr Ser Phe Val Lys Arg His
 180 185 190
 Leu Gly Leu Ser Ser Thr Pro Gly Ile Arg Trp Val Val Ala Phe Phe
 195 200 205
 Arg Gln Phe Phe Arg Ser Val Thr Lys Val Asp Tyr Leu Thr Leu Arg
 210 215 220
 Ala Gly Phe Ile Asn Ala His Leu Ser Gln Asn Ser Lys Phe Asp Phe
 225 230 235 240

His Lys Tyr Ile Lys Arg Ser Met Glu Asp Asp Phe Lys Val Val Val
 245 250 255
 Gly Ile Ser Leu Pro Leu Trp Gly Val Ala Ile Leu Thr Leu Phe Leu
 260 265 270
 Asp Ile Asn Gly Val Gly Thr Leu Ile Trp Ile Ser Phe Ile Pro Leu
 275 280 285
 Val Ile Leu Leu Cys Val Gly Thr Lys Leu Glu Met Ile Ile Met Glu
 290 295 300
 Met Ala Leu Glu Ile Gln Asp Arg Ala Ser Val Ile Lys Gly Ala Pro
 305 310 315 320
 Val Val Glu Pro Ser Asn Lys Phe Phe Trp Phe His Arg Pro Asp Trp
 325 330 335
 Val Leu Phe Phe Ile His Leu Thr Leu Phe Gln Asn Ala Phe Gln Met
 340 345 350
 Ala His Phe Val Trp Thr Val Ala Thr Pro Gly Leu Lys Lys Cys Tyr
 355 360 365
 His Thr Gln Ile Gly Leu Ser Ile Met Lys Val Val Val Gly Leu Ala
 370 375 380
 Leu Gln Phe Leu Cys Ser Tyr Met Thr Phe Pro Leu Tyr Ala Leu Val
 385 390 395 400
 Thr Gln Met Gly Ser Asn Met Lys Arg Ser Ile Phe Asp Glu Gln Thr
 405 410 415
 Ser Lys Ala Leu Thr Asn Trp Arg Asn Thr Ala Lys Glu Lys Lys Lys
 420 425 430
 Val Arg Asp Thr Asp Met Leu Met Ala Gln Met Ile Gly Asp Ala Thr
 435 440 445
 Pro Ser Arg Gly Ser Ser Pro Met Pro Ser Arg Gly Ser Ser Pro Val
 450 455 460
 His Leu Leu His Lys Gly Met Gly Arg Ser Asp Asp Pro Gln Ser Ala
 465 470 475 480
 Pro Thr Ser Pro Arg Thr Gln Gln Glu Ala Arg Asp Met Tyr Pro Val
 485 490 495
 Val Val Ala His Pro Val His Arg Leu Asn Pro Asn Asp Arg Arg Arg
 500 505 510
 Ser Ala Ser Ser Ser Ala Leu Glu Ala Asp Ile Pro Ser Ala Asp Phe
 515 520 525
 Ser Phe Ser Gln Gly
 530

<210> 40
 <211> 542

<212> PRT

<213> Arabidopsis thaliana

<400> 40

Met	Ile	Thr	Arg	Ser	Arg	Cys	Arg	Arg	Ser	Leu	Leu	Trp	Phe	Leu	Val
1				5					10					15	
Phe	His	Gly	Gly	Ala	Thr	Ala	Thr	Gly	Ala	Pro	Ser	Gly	Gly	Lys	Glu
			20					25					30		
Leu	Ser	Gln	Thr	Pro	Thr	Trp	Ala	Val	Ala	Val	Val	Cys	Thr	Phe	Leu
		35					40					45			
Ile	Leu	Ile	Ser	His	Leu	Leu	Glu	Lys	Gly	Leu	Gln	Arg	Leu	Ala	Asn
	50					55					60				
Trp	Leu	Trp	Lys	Lys	His	Lys	Asn	Ser	Leu	Leu	Glu	Ala	Leu	Glu	Lys
	65				70					75					80
Ile	Lys	Ala	Glu	Leu	Met	Ile	Leu	Gly	Phe	Ile	Ser	Leu	Leu	Leu	Thr
				85					90					95	
Phe	Gly	Glu	Pro	Tyr	Ile	Leu	Lys	Ile	Cys	Val	Pro	Arg	Lys	Ala	Ala
			100					105					110		
Leu	Ser	Met	Leu	Pro	Cys	Leu	Ser	Glu	Asp	Thr	Val	Leu	Phe	Gln	Lys
		115					120					125			
Leu	Ala	Pro	Ser	Ser	Leu	Ser	Arg	His	Leu	Leu	Ala	Ala	Gly	Asp	Thr
	130					135					140				
Ser	Ile	Asn	Cys	Lys	Gln	Gly	Ser	Glu	Pro	Leu	Ile	Thr	Leu	Lys	Gly
145					150					155					160
Leu	His	Gln	Leu	His	Ile	Leu	Leu	Phe	Phe	Leu	Ala	Ile	Phe	His	Ile
				165					170					175	
Val	Tyr	Ser	Leu	Ile	Thr	Met	Met	Leu	Ser	Arg	Leu	Lys	Ile	Arg	Gly
			180					185					190		
Trp	Lys	Lys	Trp	Glu	Gln	Glu	Thr	Leu	Ser	Asn	Asp	Tyr	Glu	Phe	Ser
		195					200					205			
Ile	Asp	His	Ser	Arg	Leu	Arg	Leu	Thr	His	Glu	Thr	Ser	Phe	Val	Arg
	210					215					220				
Glu	His	Thr	Ser	Phe	Trp	Thr	Thr	Thr	Pro	Phe	Phe	Phe	Tyr	Val	Gly
225					230					235					240
Cys	Phe	Phe	Arg	Gln	Phe	Phe	Val	Ser	Val	Glu	Arg	Thr	Asp	Tyr	Leu
				245					250					255	
Thr	Leu	Arg	His	Gly	Phe	Ile	Ser	Ala	His	Leu	Ala	Pro	Gly	Arg	Lys
			260					265					270		
Phe	Asn	Phe	Gln	Arg	Tyr	Ile	Lys	Arg	Ser	Leu	Glu	Asp	Asp	Phe	Lys
	275						280					285			
Leu	Val	Val	Gly	Ile	Ser	Pro	Val	Leu	Trp	Ala	Ser	Phe	Val	Ile	Phe
	290					295					300				

Leu Leu Phe Asn Val Asn Gly Trp Arg Thr Leu Phe Trp Ala Ser Ile
 305 310 315 320
 Pro Pro Leu Leu Ile Ile Leu Ala Val Gly Thr Lys Leu Gln Ala Ile
 325 330 335
 Met Ala Thr Met Ala Leu Glu Ile Val Glu Thr His Ala Val Val Gln
 340 345 350
 Gly Met Pro Leu Val Gln Gly Ser Asp Arg Tyr Phe Trp Phe Asp Cys
 355 360 365
 Pro Gln Leu Leu Leu His Leu Ile His Phe Ala Leu Phe Gln Asn Ala
 370 375 380
 Phe Gln Ile Thr His Phe Phe Trp Ile Trp Tyr Ser Phe Gly Leu Lys
 385 390 395 400
 Ser Cys Phe His Lys Asp Phe Asn Leu Val Val Ser Lys Leu Phe Leu
 405 410 415
 Cys Leu Gly Ala Leu Ile Leu Cys Ser Tyr Ile Thr Leu Pro Leu Tyr
 420 425 430
 Ala Leu Val Thr Gln Met Gly Ser His Met Lys Lys Ala Val Phe Asp
 435 440 445
 Glu Gln Met Ala Lys Ala Leu Lys Lys Trp His Lys Asp Ile Lys Leu
 450 455 460
 Lys Lys Gly Lys Ala Arg Lys Leu Pro Ser Lys Thr Leu Gly Val Ser
 465 470 475 480
 Glu Ser Phe Ser Leu Ser Ser Ser Ser Ala Thr Thr Leu His Arg
 485 490 495
 Ser Lys Thr Thr Gly His Ser Ser Asn Ile Ile Tyr Tyr Lys Gln Glu
 500 505 510
 Asp Glu Glu Asp Glu Met Ser Asp Leu Glu Ala Gly Ala Glu Asp Ala
 515 520 525
 Ile Asp Arg Ile Gln Gln Gln Glu Met Gln Phe His Asn Ser
 530 535 540

 <210> 41
 <211> 526
 <212> PRT
 <213> Arabidopsis thaliana

 <400> 41
 Met Gly His Gly Gly Glu Gly Met Ser Leu Glu Phe Thr Pro Thr Trp
 1 5 10 15
 Val Val Ala Gly Val Cys Thr Val Ile Val Ala Ile Ser Leu Ala Val
 20 25 30

Glu	Arg	Leu	Leu	His	Tyr	Phe	Gly	Thr	Val	Leu	Lys	Lys	Lys	Lys	Gln
35						40						45			
Lys	Pro	Leu	Tyr	Glu	Ala	Leu	Gln	Lys	Val	Lys	Glu	Glu	Leu	Met	Leu
50						55				60					
Leu	Gly	Phe	Ile	Ser	Leu	Leu	Thr	Val	Phe	Gln	Gly	Leu	Ile	Ser	
65					70				75						80
Lys	Phe	Cys	Val	Lys	Glu	Asn	Val	Leu	Met	His	Met	Leu	Pro	Cys	Ser
				85				90						95	
Leu	Asp	Ser	Arg	Arg	Glu	Ala	Gly	Ala	Ser	Glu	His	Lys	Asn	Val	Thr
		100						105				110			
Ala	Lys	Glu	His	Phe	Gln	Thr	Phe	Leu	Pro	Ile	Val	Gly	Thr	Thr	Arg
115						120						125			
Arg	Leu	Leu	Ala	Glu	His	Ala	Ala	Val	Gln	Val	Gly	Tyr	Cys	Ser	Glu
130						135				140					
Lys	Gly	Lys	Val	Pro	Leu	Leu	Ser	Leu	Glu	Ala	Leu	His	His	Leu	His
145					150				155						160
Ile	Phe	Ile	Phe	Val	Leu	Ala	Ile	Ser	His	Val	Thr	Phe	Cys	Val	Leu
				165				170						175	
Thr	Val	Ile	Phe	Gly	Ser	Thr	Arg	Ile	His	Gln	Trp	Lys	Lys	Trp	Glu
		180						185				190			
Asp	Ser	Ile	Ala	Asp	Glu	Lys	Phe	Asp	Pro	Glu	Thr	Ala	Leu	Arg	Lys
195						200						205			
Arg	Arg	Val	Thr	His	Val	His	Asn	His	Ala	Phe	Ile	Lys	Glu	His	Phe
210						215				220					
Leu	Gly	Ile	Gly	Lys	Asp	Ser	Val	Ile	Leu	Gly	Trp	Thr	Gln	Ser	Phe
225					230				235						240
Leu	Lys	Gln	Phe	Tyr	Asp	Ser	Val	Thr	Lys	Ser	Asp	Tyr	Val	Thr	Leu
				245				250						255	
Arg	Leu	Gly	Phe	Ile	Met	Thr	His	Cys	Lys	Gly	Asn	Pro	Lys	Leu	Asn
		260						265				270			
Phe	His	Lys	Tyr	Met	Met	Arg	Ala	Leu	Glu	Asp	Asp	Phe	Lys	Gln	Val
275						280						285			
Val	Gly	Ile	Ser	Trp	Tyr	Leu	Trp	Ile	Phe	Val	Val	Ile	Phe	Leu	Leu
290						295				300					
Leu	Asn	Val	Asn	Gly	Trp	His	Thr	Tyr	Phe	Trp	Ile	Ala	Phe	Ile	Pro
305					310				315						320
Phe	Ala	Leu	Leu	Leu	Ala	Val	Gly	Thr	Lys	Leu	Glu	His	Val	Ile	Ala
				325				330						335	
Gln	Leu	Ala	His	Glu	Val	Ala	Glu	Lys	His	Val	Ala	Ile	Glu	Gly	Asp
		340						345				350			

Leu Val Val Lys Pro Ser Asp Glu His Phe Trp Phe Ser Lys Pro Gln
355 360 365

Ile Val Leu Tyr Leu Ile His Phe Ile Leu Phe Gln Asn Ala Phe Glu
370 375 380

Ile Ala Phe Phe Phe Trp Ile Trp Val Thr Tyr Gly Phe Asp Ser Cys
385 390 395 400

Ile Met Gly Gln Val Arg Tyr Ile Val Pro Arg Leu Val Ile Gly Val
405 410 415

Phe Ile Gln Val Leu Cys Ser Tyr Ser Thr Leu Pro Leu Tyr Ala Ile
420 425 430

Val Ser Gln Met Gly Ser Ser Phe Lys Lys Ala Ile Phe Glu Glu Asn
435 440 445

Val Gln Val Gly Leu Val Gly Trp Ala Gln Lys Val Lys Gln Lys Arg
450 455 460

Asp Leu Lys Ala Ala Ala Ser Asn Gly Asp Glu Gly Ser Ser Gln Ala
465 470 475 480

Gly Pro Gly Pro Asp Ser Gly Ser Gly Ser Ala Pro Ala Ala Gly Pro
485 490 495

Gly Ala Gly Phe Ala Gly Ile Gln Leu Ser Arg Val Thr Arg Asn Asn
500 505 510

Ala Gly Asp Thr Asn Asn Glu Ile Thr Pro Asp His Asn Asn
515 520 525

<210> 42

<211> 583

<212> PRT

<213> Arabidopsis thaliana

<400> 42

Met Ala Asp Gln Val Lys Glu Lys Thr Leu Glu Glu Thr Ser Thr Trp
1 5 10 15

Ala Val Ala Val Val Cys Phe Val Leu Leu Leu Ile Ser Ile Val Ile
20 25 30

Glu Lys Leu Ile His Lys Ile Gly Ser Trp Phe Lys Lys Lys Asn Lys
35 40 45

Lys Ala Leu Tyr Glu Ala Leu Glu Lys Val Lys Ala Glu Leu Met Leu
50 55 60

Met Gly Phe Ile Ser Leu Leu Leu Thr Ile Gly Gln Gly Tyr Ile Ser
65 70 75 80

Asn Ile Cys Ile Pro Lys Asn Ile Ala Ala Ser Met His Pro Cys Ser
85 90 95

Ala Ser Glu Glu Ala Arg Lys Tyr Gly Lys Lys Asp Val Pro Lys Glu
100 105 110

Asp Glu Glu Glu Asn Leu Arg Arg Lys Leu Leu Gln Leu Val Asp Ser
 115 120 125
 Leu Ile Pro Arg Arg Ser Leu Ala Thr Lys Gly Tyr Asp Lys Cys Ala
 130 135 140
 Glu Lys Gly Lys Val Ala Phe Val Ser Ala Tyr Gly Met His Gln Leu
 145 150 155 160
 His Ile Phe Ile Phe Val Leu Ala Val Cys His Val Ile Tyr Cys Ile
 165 170 175
 Val Thr Tyr Ala Leu Gly Lys Thr Lys Met Arg Arg Trp Lys Lys Trp
 180 185 190
 Glu Glu Glu Thr Lys Thr Ile Glu Tyr Gln Tyr Ser His Asp Pro Glu
 195 200 205
 Arg Phe Arg Phe Ala Arg Asp Thr Ser Phe Gly Arg Arg His Leu Ser
 210 215 220
 Phe Trp Ser Lys Ser Thr Ile Thr Leu Trp Ile Val Cys Phe Phe Arg
 225 230 235 240
 Gln Phe Phe Arg Ser Val Thr Lys Val Asp Tyr Leu Thr Leu Arg His
 245 250 255
 Gly Phe Ile Met Ala His Leu Ala Pro Gly Ser Asp Ala Arg Phe Asp
 260 265 270
 Phe Arg Lys Tyr Ile Gln Arg Ser Leu Glu Glu Asp Phe Lys Thr Ile
 275 280 285
 Val Glu Ile Asn Pro Val Ile Trp Phe Ile Ala Val Leu Phe Leu Leu
 290 295 300
 Thr Asn Thr Asn Gly Leu Asn Ser Tyr Leu Trp Leu Pro Phe Ile Pro
 305 310 315 320
 Phe Ile Val Ile Leu Ile Val Gly Thr Lys Leu Gln Val Ile Ile Thr
 325 330 335
 Lys Leu Gly Leu Arg Ile Gln Glu Lys Gly Asp Val Val Lys Gly Thr
 340 345 350
 Pro Leu Val Gln Pro Gly Asp His Phe Phe Trp Phe Gly Arg Pro Arg
 355 360 365
 Phe Ile Leu Phe Leu Ile His Leu Val Leu Phe Thr Asn Ala Phe Gln
 370 375 380
 Leu Ala Phe Phe Val Trp Ser Thr Tyr Glu Phe Gly Leu Lys Asn Cys
 385 390 395 400
 Phe His Glu Ser Arg Val Asp Val Ile Ile Arg Ile Ser Ile Gly Leu
 405 410 415
 Leu Val Gln Ile Leu Cys Ser Tyr Val Thr Leu Pro Leu Tyr Ala Leu
 420 425 430

Val Thr Gln Met Gly Ser Lys Met Lys Pro Thr Val Phe Asn Glu Arg
 435 440 445
 Val Ala Thr Ala Leu Lys Ser Trp His His Thr Ala Lys Lys Asn Ile
 450 455 460
 Lys His Gly Arg Thr Ser Glu Ser Thr Thr Pro Phe Ser Ser Arg Pro
 465 470 475 480
 Thr Thr Pro Thr His Gly Ser Ser Pro Ile His Leu Leu Arg Asn Ala
 485 490 495
 Pro His Lys Arg Ser Arg Ser Val Asp Glu Ser Phe Ala Asn Ser Phe
 500 505 510
 Ser Pro Arg Asn Ser Asp Phe Asp Ser Trp Asp Pro Glu Ser Gln His
 515 520 525
 Glu Thr Ala Glu Thr Ser Asn Ser Asn His Arg Ser Arg Phe Gly Glu
 530 535 540
 Glu Glu Ser Glu Lys Lys Phe Val Ser Ser Ser Val Glu Leu Pro Pro
 545 550 555 560
 Gly Pro Gly Gln Ile Arg Thr Gln His Glu Ile Ser Thr Ile Ser Leu
 565 570 575
 Arg Asp Phe Ser Phe Lys Arg
 580